

<110> Raghuram Kalluri

<130> 1440.1027-016

<150> PCT/US01/00565

<151> 2001-01-08

<150> US 09/543,371

<151> 2000-04-04

<150> US 09/335,224

<151> 1999-06-17

<150> US 60/126,175

<151> 1999-03-25

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Asp Pro Gln Cys Pro Ser Gly Thr Lys Ile Leu Tyr His Gly Tyr Ser
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ttg	ctc	tac	gtg	caa	ggc	aat	gaa	cgg	gcc	cat	gga	cag	gac	ttg	ggc	144
Leu	Leu	Tyr	Val	Gln	Gly	Asn	Glu	Arg	Ala	His	Gly	Gln	Asp	Leu	Gly	
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acg gcc ggc agc tgc ctg cgc aag ttc agc aca atg ccc ttc ctg ttc	192
Thr Ala Gly Ser Cys Leu Arg Lys Phe Ser Thr Met Pro Phe Leu Phe	
50 55 60	
tgc aat att aac aac gtg tgc aac ttt gca tca cga aat gac tac tcg	240
Cys Asn Ile Asn Asn Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser	
65 70 75 80	
tac tgg ctg tcc acc cct gag ccc atg ccc atg tca atg gca ccc atc	288
Tyr Trp Leu Ser Thr Pro Glu Pro Met Pro Met Ser Met Ala Pro Ile	
85 90 95	
acg ggg gaa aac ata aga cca ttt att agt agg tgt gct gtg tgt gag	336
Thr Gly Glu Asn Ile Arg Pro Phe Ile Ser Arg Cys Ala Val Cys Glu	
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gcg cct gcc atg gtg atg gcc gtg cac agc cag acc att cag atc cca	384
Ala Pro Ala Met Val Met Ala Val His Ser Gln Thr Ile Gln Ile Pro	
115 120 125	
ccg tgc ccc agc ggg tgg tcc tcg ctg tgg atc ggc tac tct ttt gtg	432
Pro Cys Pro Ser Gly Trp Ser Ser Leu Trp Ile Gly Tyr Ser Phe Val	
130 135 140	
atg cac acc agc gct ggt gca gaa ggc tct ggc caa gcc ctg gcg tcc	480
Met His Thr Ser Ala Gly Ala Glu Gly Ser Gly Gln Ala Leu Ala Ser	
145 150 155 160	
ccc ggc tcc tgc ctg gag gag ttt aga agt gcg cca ttc atc gag tgt	528
Pro Gly Ser Cys Leu Glu Glu Phe Arg Ser Ala Pro Phe Ile Glu Cys	
165 170 175	
cac ggc cgt ggg acc tgc aat tac tac gca aac gct tac agc ttt tgg	576
His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe Trp	
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ctc gcc acc ata gag agg agc gag atg ttc aag aag cct acg ccg tcc	624
Leu Ala Thr Ile Glu Arg Ser Glu Met Phe Lys Lys Pro Thr Pro Ser	
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acc ttg aag gca ggg gag ctg cgc acg cac gtc agc cgc tgc caa gtc	672
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 Thr Ala Gly Ser Cys Leu Arg Lys Phe Ser Thr Met Pro Phe Leu Phe
 50 55 60
 Cys Asn Ile Asn Asn Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser
 65 70 75 80
 Tyr Trp Leu Ser Thr Pro Glu Pro Met Pro Met Ser Met Ala Pro Ile
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 Thr Gly Glu Asn Ile Arg Pro Phe Ile Ser Arg Cys Ala Val Cys Glu
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 Ala Pro Ala Met Val Met Ala Val His Ser Gln Thr Ile Gln Ile Pro
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 Pro Cys Pro Ser Gly Trp Ser Ser Leu Trp Ile Gly Tyr Ser Phe Val
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 Met His Thr Ser Ala Gly Ala Glu Gly Ser Gly Gln Ala Leu Ala Ser
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 His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe Trp
 180 185 190
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<223> pET22b(+) forward oligonucleotide primer for Arresten

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ccc atg tgc ccg gtg ggc atg aac aaa ctc tgg agt gga tac agc ctg 96
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ctg tac ttc gag ggc cag gag aag gcg cac aac cag gac ctg ggg ctg 144
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 35 40 45

gcg ggc tcc tgc ctg gcg cgg ttc agc acc atg ccc ttc ctg tac tgc 192
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 50 55 60

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 65 70 75 80

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 Trp Leu Ser Thr Thr Ala Pro Leu Pro Met Met Pro Val Ala Glu Asp
 85 90 95

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atc gcc atc gcg gtc cac agt cag gat gtc tcc atc cca cac tgc cca 384
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 115 120 125

gct ggg tgg cgg agt ttg tgg atc gga tat tcc ttc ctc atg cac acg 432
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 130 135 140

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 Ala Ala Gly Asp Glu Gly Gly Gln Ser Leu Val Ser Pro Gly Ser
 145 150 155 160

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 Cys Leu Glu Asp Phe Arg Ala Thr Pro Phe Ile Glu Cys Asn Gly Gly
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cgc ggc acc tgc cac tac tac gcc aac aag tac agc ttc tgg ctg acc 576
 Arg Gly Thr Cys His Tyr Tyr Ala Asn Lys Tyr Ser Phe Trp Leu Thr
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 Thr Ile Pro Glu Gln Ser Phe Gln Gly Ser Pro Ser Ala Asp Thr Leu
 195 200 205

aag gcc ggc ctc atc cgc aca cac atc agc cgc tgc cag gtg tgc atg 672
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 145 150 155 160
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 165 170 175
 Arg Gly Thr Cys His Tyr Tyr Ala Asn Lys Tyr Ser Phe Trp Leu Thr
 180 185 190
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 Canstatin

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<210> 8
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 <212> DNA
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 Canstatin

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50 55 60

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65 70 75 80

aat gtc aat gat gta tgt aat ttt gca tct cga aat gat tat tca tac 288
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85 90 95

tgg ctg tca aca cca gct ctg atg cca atg aac atg gct ccc att act 336
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ggc aga gcc ctt gag cct tat ata agc aga tgc act gtt tgt gaa ggt 384
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cct gcg atc gcc ata gcc gtt cac agc caa acc act gac att cct cca 432
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130 135 140

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Phe Thr Ser Ala Gly Ser Glu Gly Thr Gly Gln Ala Leu Ala Ser Pro
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1 5 10 15
aca acg aga ggc ttt gtc ttc acc cga cac agt caa acc aca gca att
Thr Thr Arg Gly Phe Val Phe Thr Arg His Ser Gln Thr Thr Ala Ile
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cct tca tgt cca gag ggg aca gtg cca ctc tac agt ggg ttt tct ttt
Pro Ser Cys Pro Glu Gly Thr Val Pro Leu Tyr Ser Gly Phe Ser Phe
35 40 45
ctt ttt gta caa gga aat caa cga gcc cac gga caa gac ctt gga act
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50 55 60
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Asn Val Asn Asp Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser Tyr
85 90 95
tgg ctg tca aca cca gct ctg atg cca atg aac atg gct ccc att act
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Pro Ala Ile Ala Ile Ala Val His Ser Gln Thr Thr Asp Ile Pro Pro
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Cys Pro His Gly Trp Ile Ser Leu Trp Lys Gly Phe Ser Phe Ile Met
145 150 155 160
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Phe Thr Ser Ala Gly Ser Glu Gly Thr Gly Gln Ala Leu Ala Ser Pro
165 170 175
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Gly Ser Cys Leu Glu Glu Phe Arg Ala Ser Pro Phe Leu Glu Cys His

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Cys 145	Pro	His	Gly	Trp 150	Ile	Ser	Leu	Trp	Lys	Gly 155	Phe	Ser	Phe	Ile	Met 160	
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Gly	Arg	Gly 195	Thr	Cys	Asn	Tyr 200	Tyr	Ser	Asn	Ser	Tyr 205	Ser	Phe	Trp	Leu	
Ala	Ser 210	Leu	Asn	Pro	Glu	Arg 215	Met	Phe	Arg	Lys	Pro 220	Ile	Pro	Ser	Thr	
Val 225	Lys	Ala	Gly	Glu 230	Leu	Glu	Lys	Ile	Ile	Ser 235	Arg	Cys	Gln	Val	Cys 240	
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<223> pET22b(+) forward oligonucleotide primer for
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<210> 12
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<210> 13
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<223> Additional vector sequence added to protein

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<223> Additional vector sequence added to protein

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<223> pPICZaA forward oligonucleotide primer for
 Arresten

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28

<210> 16

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<211> 35
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<220>
 <223> pPICZaA reverse oligonucleotide primer for
 Arresten

<400> 16
 tgctctagag gtgttcttct catacagact tggca

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<210> 17
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> pPICZaA forward oligonucleotide primer for
 Canstatin

<400> 17
 ttcggaattc gtcagcatcg gctacctcct g

31

<210> 18
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> pPICZaA reverse oligonucleotide primer for
 Canstatin

<400> 18
 ggggtacccc caggttcttc atgcacacct gg

32

<210> 19
 <211> 244
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Tumstatin (amino acids 1-244)

<400> 19
 Pro Gly Leu Lys Gly Lys Arg Gly Asp Ser Gly Ser Pro Ala Thr Trp
 1 5 10 15
 Thr Thr Arg Gly Phe Val Phe Thr Arg His Ser Gln Thr Thr Ala Ile
 20 25 30
 Pro Ser Cys Pro Glu Gly Thr Val Pro Leu Tyr Ser Gly Phe Ser Phe
 35 40 45
 Leu Phe Val Gln Gly Asn Gln Arg Ala His Gly Gln Asp Leu Gly Thr
 50 55 60
 Leu Gly Ser Cys Leu Gln Arg Phe Thr Thr Met Pro Phe Leu Phe Cys
 65 70 75 80
 Asn Val Asn Asp Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser Tyr
 85 90 95
 Trp Leu Ser Thr Pro Ala Leu Met Pro Met Asn Met Ala Pro Ile Thr
 100 105 110
 Gly Arg Ala Leu Glu Pro Tyr Ile Ser Arg Cys Thr Val Cys Glu Gly

10/21

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      115              120              125
Pro Ala Ile Ala Ile Ala Val His Ser Gln Thr Thr Asp Ile Pro Pro
      130              135              140
Cys Pro His Gly Trp Ile Ser Leu Trp Lys Gly Phe Ser Phe Ile Met
145      150      155      160
Phe Thr Ser Ala Gly Ser Glu Gly Thr Gly Gln Ala Leu Ala Ser Pro
      165      170      175
Gly Ser Cys Leu Glu Glu Phe Arg Ala Ser Pro Phe Leu Glu Cys His
      180      185      190
Gly Arg Gly Thr Cys Asn Tyr Tyr Ser Asn Ser Tyr Ser Phe Trp Leu
      195      200      205
Ala Ser Leu Asn Pro Glu Arg Met Phe Arg Lys Pro Ile Pro Ser Thr
      210      215      220
Val Lys Ala Gly Glu Leu Glu Lys Ile Ile Ser Arg Cys Gln Val Cys
225      230      235      240
Met Lys Lys Arg
```

<210> 20
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Tumstatin 333 (amino acids 2-125 of SEQ ID NO:10)

<400> 20
Gly Leu Lys Gly Lys Arg Gly Asp Ser Gly Ser Pro Ala Thr Trp Thr
1 5 10 15
Thr Arg Gly Phe Val Phe Thr Arg His Ser Gln Thr Thr Ala Ile Pro
20 25 30
Ser Cys Pro Glu Gly Thr Val Pro Leu Tyr Ser Gly Phe Ser Phe Leu
35 40 45
Phe Val Gln Gly Asn Gln Arg Ala His Gly Gln Asp Leu Gly Thr Leu
50 55 60
Gly Ser Cys Leu Gln Arg Phe Thr Thr Met Pro Phe Leu Phe Cys Asn
65 70 75 80
Val Asn Asp Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser Tyr Trp
85 90 95
Leu Ser Thr Pro Ala Leu Met Pro Met Asn Met Ala Pro Ile Thr Gly
100 105 110
Arg Ala Leu Glu Pro Tyr Ile Ser Arg Cys Thr Val
115 120

<210> 21
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Tumstatin 334 (amino acids 126-244 of SEQ ID NO:10)

<400> 21
Cys Glu Gly Pro Ala Ile Ala Ile Ala Val His Ser Gln Thr Thr Asp
1 5 10 15
Ile Pro Pro Cys Pro His Gly Trp Ile Ser Leu Trp Lys Gly Phe Ser

11/21

		20					25					30			
Phe	Ile	Met	Phe	Thr	Ser	Ala	Gly	Ser	Glu	Gly	Thr	Gly	Gln	Ala	Leu
		35					40					45			
Ala	Ser	Pro	Gly	Ser	Cys	Leu	Glu	Glu	Phe	Arg	Ala	Ser	Pro	Phe	Leu
		50				55					60				
Glu	Cys	His	Gly	Arg	Gly	Thr	Cys	Asn	Tyr	Tyr	Ser	Asn	Ser	Tyr	Ser
65					70					75				80	
Phe	Trp	Leu	Ala	Ser	Leu	Asn	Pro	Glu	Arg	Met	Phe	Arg	Lys	Pro	Ile
				85					90					95	
Pro	Ser	Thr	Val	Lys	Ala	Gly	Glu	Leu	Glu	Lys	Ile	Ile	Ser	Arg	Cys
			100					105					110		
Gln	Val	Cys	Met	Lys	Lys	Arg									
		115													

<210> 22

<211> 191

<212> PRT

<213> Artificial Sequence

<220>

<223> Tum-1 (Tumstatin N53) (amino acids 54-244 of SEQ ID NO:10)

<400> 22

Asn	Gln	Arg	Ala	His	Gly	Gln	Asp	Leu	Gly	Thr	Leu	Gly	Ser	Cys	Leu
1				5					10					15	
Gln	Arg	Phe	Thr	Thr	Met	Pro	Phe	Leu	Phe	Cys	Asn	Val	Asn	Asp	Val
			20					25				30			
Cys	Asn	Phe	Ala	Ser	Arg	Asn	Asp	Tyr	Ser	Tyr	Trp	Leu	Ser	Thr	Pro
		35				40					45				
Ala	Leu	Met	Pro	Met	Asn	Met	Ala	Pro	Ile	Thr	Gly	Arg	Ala	Leu	Glu
		50				55					60				
Pro	Tyr	Ile	Ser	Arg	Cys	Thr	Val	Cys	Glu	Gly	Pro	Ala	Ile	Ala	Ile
65					70					75				80	
Ala	Val	His	Ser	Gln	Thr	Thr	Asp	Ile	Pro	Pro	Cys	Pro	His	Gly	Trp
				85				90						95	
Ile	Ser	Leu	Trp	Lys	Gly	Phe	Ser	Phe	Ile	Met	Phe	Thr	Ser	Ala	Gly
		100						105					110		
Ser	Glu	Gly	Thr	Gly	Gln	Ala	Leu	Ala	Ser	Pro	Gly	Ser	Cys	Leu	Glu
		115					120					125			
Glu	Phe	Arg	Ala	Ser	Pro	Phe	Leu	Glu	Cys	His	Gly	Arg	Gly	Thr	Cys
		130				135					140				
Asn	Tyr	Tyr	Ser	Asn	Ser	Tyr	Ser	Phe	Trp	Leu	Ala	Ser	Leu	Asn	Pro
145					150					155				160	
Glu	Arg	Met	Phe	Arg	Lys	Pro	Ile	Pro	Ser	Thr	Val	Lys	Ala	Gly	Glu
				165				170						175	
Leu	Glu	Lys	Ile	Ile	Ser	Arg	Cys	Gln	Val	Cys	Met	Lys	Lys	Arg	
			180					185					190		

<210> 23

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Tum-2 (amino acids 1-132 of SEQ ID NO:10)

12/21

<400> 23

```
Pro Gly Leu Lys Gly Lys Arg Gly Asp Ser Gly Ser Pro Ala Thr Trp
 1          5          10          15
Thr Thr Arg Gly Phe Val Phe Thr Arg His Ser Gln Thr Thr Ala Ile
          20          25          30
Pro Ser Cys Pro Glu Gly Thr Val Pro Leu Tyr Ser Gly Phe Ser Phe
          35          40          45
Leu Phe Val Gln Gly Asn Gln Arg Ala His Gly Gln Asp Leu Gly Thr
          50          55          60
Leu Gly Ser Cys Leu Gln Arg Phe Thr Thr Met Pro Phe Leu Phe Cys
65          70          75          80
Asn Val Asn Asp Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser Tyr
          85          90          95
Trp Leu Ser Thr Pro Ala Leu Met Pro Met Asn Met Ala Pro Ile Thr
          100          105          110
Gly Arg Ala Leu Glu Pro Tyr Ile Ser Arg Cys Thr Val Cys Glu Gly
          115          120          125
Pro Ala Ile Ala
          130
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<210> 24

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Tum-3 (amino acids 133-244 of SEQ ID NO:10)

<400> 24

```
Ile Ala Val His Ser Gln Thr Thr Asp Ile Pro Pro Cys Pro His Gly
 1          5          10          15
Trp Ile Ser Leu Trp Lys Gly Phe Ser Phe Ile Met Phe Thr Ser Ala
          20          25          30
Gly Ser Glu Gly Thr Gly Gln Ala Leu Ala Ser Pro Gly Ser Cys Leu
          35          40          45
Glu Glu Phe Arg Ala Ser Pro Phe Leu Glu Cys His Gly Arg Gly Thr
          50          55          60
Cys Asn Tyr Tyr Ser Asn Ser Tyr Ser Phe Trp Leu Ala Ser Leu Asn
65          70          75          80
Pro Glu Arg Met Phe Arg Lys Pro Ile Pro Ser Thr Val Lys Ala Gly
          85          90          95
Glu Leu Glu Lys Ile Ile Ser Arg Cys Gln Val Cys Met Lys Lys Arg
          100          105          110
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<210> 25

<211> 64

<212> PRT

<213> Artificial Sequence

<220>

<223> Tum-4 (amino acids 181-244 of SEQ ID NO:10)

<400> 25

```
Glu Glu Phe Arg Ala Ser Pro Phe Leu Glu Cys His Gly Arg Gly Thr
 1          5          10          15
Cys Asn Tyr Tyr Ser Asn Ser Tyr Ser Phe Trp Leu Ala Ser Leu Asn
          20          25          30
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13/21

Pro Glu Arg Met Phe Arg Lys Pro Ile Pro Ser Thr Val Lys Ala Gly
35 40 45
Glu Leu Glu Lys Ile Ile Ser Arg Cys Gln Val Cys Met Lys Lys Arg
50 55 60

<210> 26
<211> 79
<212> PRT
<213> Artificial Sequence

<220>
<223> Tum-5 (amino acids 54-132 of SEQ ID NO:10)

<400> 26
Asn Gln Arg Ala His Gly Gln Asp Leu Gly Thr Leu Gly Ser Cys Leu
1 5 10 15
Gln Arg Phe Thr Thr Met Pro Phe Leu Phe Cys Asn Val Asn Asp Val
20 25 30
Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser Tyr Trp Leu Ser Thr Pro
35 40 45
Ala Leu Met Pro Met Asn Met Ala Pro Ile Thr Gly Arg Ala Leu Glu
50 55 60
Pro Tyr Ile Ser Arg Cys Thr Val Cys Glu Gly Pro Ala Ile Ala
65 70 75

<210> 27
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> T1 (amino acids 1-20 of SEQ ID NO:10)

<400> 27
Pro Gly Leu Lys Gly Lys Arg Gly Asp Ser Gly Ser Pro Ala Thr Trp
1 5 10 15
Thr Thr Arg Gly
20

<210> 28
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> T2 (amino acids 54-73 of SEQ ID NO:10)

<400> 28
Asn Gln Arg Ala His Gly Gln Asp Leu Gly Thr Leu Gly Ser Cys Leu
1 5 10 15
Gln Arg Phe Thr
20

<210> 29
<211> 20

<210> 33

<211> 88
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Tumstatin-45-132 (amino acids 45-132 of SEQ ID NO:10)

<400> 33
 Gly Phe Ser Phe Leu Phe Val Gln Gly Asn Gln Arg Ala His Gly Gln
 1 5 10 15
 Asp Leu Gly Thr Leu Gly Ser Cys Leu Gln Arg Phe Thr Thr Met Pro
 20 25 30
 Phe Leu Phe Cys Asn Val Asn Asp Val Cys Asn Phe Ala Ser Arg Asn
 35 40 45
 Asp Tyr Ser Tyr Trp Leu Ser Thr Pro Ala Leu Met Pro Met Asn Met
 50 55 60
 Ala Pro Ile Thr Gly Arg Ala Leu Glu Pro Tyr Ile Ser Arg Cys Thr
 65 70 75 80
 Val Cys Glu Gly Pro Ala Ile Ala
 85

<210> 34
 <211> 88
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Tumstatin-5-126-C-A (amino acids 45-132 of SEQ ID NO:10; alanine has been substituted for the cysteine residue at position 126 of the full-length Tumstatin molecule)

<400> 34
 Gly Phe Ser Phe Leu Phe Val Gln Gly Asn Gln Arg Ala His Gly Gln
 1 5 10 15
 Asp Leu Gly Thr Leu Gly Ser Cys Leu Gln Arg Phe Thr Thr Met Pro
 20 25 30
 Phe Leu Phe Cys Asn Val Asn Asp Val Cys Asn Phe Ala Ser Arg Asn
 35 40 45
 Asp Tyr Ser Tyr Trp Leu Ser Thr Pro Ala Leu Met Pro Met Asn Met
 50 55 60
 Ala Pro Ile Thr Gly Arg Ala Leu Glu Pro Tyr Ile Ser Arg Cys Thr
 65 70 75 80
 Val Ala Glu Gly Pro Ala Ile Ala
 85

<210> 35
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic blocking peptide

<400> 35
 Cys Asp Cys Arg Gly Asp Cys Phe Cys

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<210> 36
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic blocking peptide

<400> 36
 Cys Asn Gly Arg Cys
 1 5

<210> 37
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> T7 (amino acids 74-98 of SEQ ID NO:10)

<400> 37
 Thr Met Pro Phe Leu Phe Cys Asn Val Asn Asp Val Cys Asn Phe Ala
 1 5 10 15
 Ser Arg Asn Asp Tyr Ser Tyr Trp Leu
 20 25

<210> 38
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> T7-mutant (amino acids 74-98 of SEQ ID NO:10;
 methionine has been substituted for the leucine
 residue at position 78 of the full-length
 Tumstatin molecule, and isoleucine has been
 substituted for valine at position 82, and
 asparagine has been substituted for aspartic acid
 at position 84)

<400> 38
 Thr Met Pro Phe Met Phe Cys Asn Ile Asn Asn Val Cys Asn Phe Ala
 1 5 10 15
 Ser Arg Asn Asp Tyr Ser Tyr Trp Leu
 20 25

<210> 39
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> T8 (amino acids 69-95 of SEQ ID NO:10; lysine has

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been substituted for the leucine residue at position 69 of the full-length Tumstatin molecule)

<400> 39

```
Lys Gln Arg Phe Thr Thr Met Pro Phe Leu Phe Cys Asn Val Asn Asp
 1           5           10           15
Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser
          20           25
```

<210> 40

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> T8-3 (amino acids 69-95 of SEQ ID NO:10; lysine has been substituted for the leucine residue at position 69 of the full-length Tumstatin molecule, and serine has been substituted for the cysteine residues at positions 80 and 86)

<400> 40

```
Lys Gln Arg Phe Thr Thr Met Pro Phe Leu Phe Ser Asn Val Asn Asp
 1           5           10           15
Val Ser Asn Phe Ala Ser Arg Asn Asp Tyr Ser
          20           25
```

<210> 41

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> TP3 (amino acids 77-95 of SEQ ID NO:10; lysine has been substituted for the phenylalanine residue at position 77 of the full-length Tumstatin molecule, and cysteine has been substituted for the aspartic acid at position 84)

<400> 41

```
Lys Leu Phe Cys Asn Val Asn Cys Val Cys Asn Phe Ala Ser Arg Asn
 1           5           10           15
Asp Tyr Ser
```

<210> 42

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> P2 (amino acids 69-95 of SEQ ID NO:10; lysine has been substituted for the leucine residue at position 69 of the full-length Tumstatin molecule, and aspartic acid has been substituted for the cysteine residues at positions 80 and 86)

<223> X at position 14 is a hydrogen or a peptidyl chain
of 1 to 12 amino acids

<400> 45

Xaa Xaa Leu Phe Xaa Asn Val Asn Xaa Val Xaa Asn Phe Xaa
 1 5 10

<210> 46

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Generic peptide

<400> 46

Thr Thr Met Pro
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<210> 47

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Generic peptide

<400> 47

Phe Thr Thr Met Pro
 1 5

<210> 48

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Generic peptide

<400> 48

Arg Phe Thr Thr Met Pro
 1 5

<210> 49

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

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